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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,092	08/23/2001	Wai Kwan Cheung	P/3987-3	9858

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NEW YORK, NY 100368403

EXAMINER

NGUYEN, DANNY

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/938,092

Applicant(s)

CHEUNG, WAI KWAN

Examiner

Danny Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10, page 8, line 25, the phrase "the heat sensor" is unclear.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al (USPN 5,998,863).

Regarding to claim 1, Kobayashi et al disclose a heat sink circuit (such as shown in fig. 1 and 6) comprises at least one U-shaped aluminum tube (such as 41) with open ends, a sealed vacuum vessel (20 detailed shown in fig. 6) with orifices into the vessel communicating with the open ends of the tubes, fibers (21) which is strongly absorbent and are impregnated with a refrigerated liquid are disposed in the vessel (see col. 6, lines 9-37). Kobayashi et al do not disclose the tube is made of aluminum, instead of a

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copper as claimed. However, it would have been obvious to one having ordinary skill in the art to substitute the aluminum tube in the cooling system of Kobayashi et al to any known metal including copper as long as it compatible with the requirements of other elements in the circuit in order to properly performs cooling heat generating components in electric devices. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding to claims 2, 7, Kobayashi et al disclose the vessel (20 shown in fig. 6) has an upper end region (201) and the orifices communicating with the tube in the upper end of the vessel.

Regarding to claim 5, Kobayashi et al disclose the vessel (20 shown in fig. 6) has an upper haft casing (201) and lower haft casing (202) secured together.

Regarding to claim 6, Kobayashi et al disclose the vessel (20 shown in fig. 6) the lower haft casing (202) including a projecting level surface for communicating with an object for heat transfer (see fig. 9 and 10).

Regarding to claims 8 and 9, Kobayashi et al discloses the sealed vessel (20) is secured by welding the upper portion (201) and lower portion (202) together (see col. 6, lines 17-43). Kobayashi et al. do not disclose using silicone gel to seal the vessel. However, it would have been obvious to one having ordinary skill in the art to utilize any known material such as silicone gel in the system of Kobayashi et al to any as long as it provide proper sealing function. It has been held that discovering an optimum value of

a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

3. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al in view of Tajima (USPN 5,647,430). Kobayashi et al disclose all limitations of claim 1 except for having a fan and supporting frame as claimed. Tajima discloses a fan (45) and supporting frame (as shown in fig. 6). It would have been obvious to one having skill in the art to modify the refrigerated liquid in the cooling system of Kobayashi et al with fan and supporting frame as taught by Tajima in order to blow out the heat generated from components (Tajima, col. 4, lines 61-62).

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al in view of Kyees (USPN 5,743,107). Kobayashi et al disclose all limitations of claim 1 except for having the refrigerated liquid being a glycol. Kyees disclose using a refrigerated liquid as glycol (see col. 3, lines 33-34). It would have been obvious to one having skill in the art to modify the refrigerated liquid in the cooling system of Kobayashi et al with a glycol liquid as taught by Kyees in order to cool down heat generating components in the device.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Tajima (USPN 5,729,995) and Chu et al (USPN 6,591,898) disclose various cooling system to protect components of circuits against damage due to heat generating in the circuit.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (703)-305-5988. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

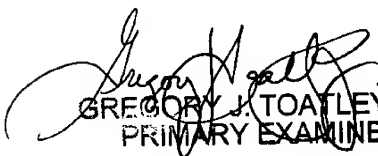
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (703)-308-3119. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-9306 for regular communications and (703)-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.

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September 15, 2003


GREGORY J. TOATLEY, JR.
PRIMARY EXAMINER